

SURGICAL OUTCOME OF A SCLERAL PATCH GRAFT IN CILIARY STAPHYLOMA WITH DISLOCATED INTRAOCULAR LENS AND RHEGMATOGENOUS RETINAL DETACHMENT

Ophthalmology

Dr Purva Date DNB, FVRS Padmashree Dr D Y Patil Medical College, Navi Mumbai

Dr Manali Deosthali* MS Ophthal Dr Deosthali Eyecare Centre, Sion*Corresponding Author

Dr Smriti Pandey MS Ophthal Grant Government Medical College and Sir J.J. Group of Hospitals, Mumbai

ABSTRACT

Background: Ciliary staphyloma is characterized by localized scleral thinning and ectasia, predisposing to vision-threatening complications¹. Case Presentation: A 54-year-old male presented with diminished vision, pain, and foreign body sensation in the left eye for one year. He had a history of small incision cataract surgery (SICS) three years prior. Examination revealed hand movements close to face vision with accurate projection of rays. A superior ciliary staphyloma measuring 10 × 8 mm was noted. Fundus evaluation showed posteriorly dislocated intraocular lens (IOL) and inferior rhegmatogenous retinal detachment involving the macula with a horseshoe tear at the 5 o'clock position. Management and Outcome: The patient underwent pars plana vitrectomy, IOL explantation, endolaser photocoagulation, silicone oil injection, and scleral patch grafting. The donor sclera was obtained from enucleated eyes, cleaned, trimmed, and sutured over the thinned sclera. Postoperatively, retinal reattachment was achieved, and vision improved to finger counting at 1 meter. After 6 months, Silicon oil removal with CMT Flex implantation was done and BCVA at 1 month follow up was 6/18. **Conclusion:** Scleral patch grafting provides effective tectonic reinforcement in eyes with ciliary staphyloma undergoing complex vitreoretinal surgery and helps restore globe integrity^{2,3}.

KEYWORDS

Ciliary staphyloma, scleral patch graft, retinal detachment, dislocated IOL, vitrectomy

INTRODUCTION

Ciliary staphyloma is a localized ectasia of the sclera in the ciliary body region, resulting in outward protrusion of uveal tissue¹. It may arise secondary to previous ocular surgery, trauma, inflammation, or degenerative conditions. Structural scleral weakening increases the risk of intraoperative and postoperative complications².

Scleral patch grafting is a tectonic procedure used to reinforce thinned sclera and restore globe integrity^{2,3}. Pars plana vitrectomy with endolaser and silicone oil tamponade is standard for complex rhegmatogenous retinal detachments involving the macula⁴⁻⁶. We report a case of ciliary staphyloma associated with posteriorly dislocated IOL and macula-involving retinal detachment, successfully managed with combined surgery and scleral patch graft.

Case Report

A 54-year-old male presented with diminished vision in the left eye for one year, associated with pain and foreign body sensation. There was no history of trauma. The patient had undergone SICS in the same eye three years prior.

Examination:

Visual acuity in the left eye was hand movements close to face with good perception of light and an accurate projection of rays. Anterior segment examination revealed a superior ciliary staphyloma measuring 10 × 8 mm.

Fundus evaluation demonstrated a posteriorly dislocated intraocular lens, inferior rhegmatogenous retinal detachment involving the macula with a horseshoe tear at 5 o'clock.

Surgical Management

The patient underwent pars plana vitrectomy, IOL explantation, endolaser photocoagulation, and silicone oil tamponade.

For the ciliary staphyloma, a scleral patch graft was placed over the area of thinned sclera to provide tectonic support. The donor sclera was obtained from enucleated eyes provided by an accredited eye bank, cleaned of residual Tenon's tissue, episclera, and any uveal remnants, and maintained in balanced salt solution to preserve hydration. The graft was trimmed to fit the defect and sutured in place with 8-0 nylon. Proper preparation ensured reduced inflammation, infection prevention, and optimal graft integration.

Postoperatively, the retina remained attached under silicone oil, and the scleral patch graft was well apposed, maintaining globe contour. The patient's visual acuity improved to finger counting at 1 meter at the

follow-up visit. 6 months later, the patient underwent Silicon oil removal (SOR) with CMT Flex implantation and final visual outcome was 6/18 at 1 month post op visit.

DISCUSSION

Ciliary staphylomas represent structural compromise of the sclera and may develop after cataract surgery due to localized weakening¹. Chronic scleral thinning increases the risk of complications such as ectasia, uveal prolapse, and poor surgical outcomes².

Management of such cases is challenging due to the dual need to restore tectonic integrity of the globe and address associated intraocular pathology such as retinal detachment. If left untreated, progressive thinning may predispose to globe rupture, persistent inflammation, and poor visual prognosis.

Scleral patch grafting provides mechanical reinforcement, restores globe integrity, and allows safe completion of vitreoretinal surgery^{2,3}. Combined pars plana vitrectomy with endolaser and silicone oil tamponade is effective in achieving retinal reattachment in complex detachments^{4,6}.

The use of cadaveric donor sclera offers several advantages, including good tensile strength, biological compatibility, and the ability to integrate with host tissue. In our case, oversizing the graft by approximately 2 mm ensured adequate coverage and reduced the risk of recurrence.

The donor sclera was prepared and sutured meticulously, which was crucial for structural support and successful postoperative recovery. Visual recovery was limited due to chronic macula-involving retinal detachment, emphasizing the importance of early intervention.

An important observation was the good vascularization of the graft at 1 month, indicating successful integration and healing. This revascularization plays a crucial role in promoting scleral re-epithelialization and long-term stability.

The use of fibrin glue for conjunctival closure provided additional benefits, including reduced surgical time, improved patient comfort, and avoidance of suture-related inflammation.

At 6 months, the successful removal of silicone oil and implantation of a CMT Flex intraocular lens contributed to significant visual rehabilitation. The final visual acuity of 6/18 in such a complex case highlights the effectiveness of a staged and well-planned surgical approach. Minimal recurrence rates of staphyloma is due to mild rise in IOP (Intra Ocular Pressure) which is transient and is generally well

controlled by medical and rarely surgical management and does not adversely affect graft survival or anatomical outcomes.^[7,8]

It suggests that scleral patch grafting provides durable tectonic support, although long-term monitoring remains essential.

To summarise, this case underscores several important clinical points like scleral patch grafts are highly effective for structural reinforcement and early identification and intervention are critical in preventing complications. Combined anterior and posterior segment surgery yields better outcomes and a staged management can optimize visual rehabilitation

CONCLUSION

Scleral patch grafting is an effective adjunct in the management of ciliary staphyloma with associated posterior segment pathology. Early surgical intervention can preserve globe integrity and achieve favorable anatomical outcomes, although functional recovery may be limited by chronic macular involvement.

Ethical Approval

This study adhered to the tenets of the Declaration of Helsinki. Institutional ethical approval was not required for a single interventional case report.

Informed Consent

Written informed consent was obtained from the patient for surgical intervention and publication of clinical details and images.

Funding

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Conflict of Interest

The authors declare no conflicts of interest regarding the publication of this manuscript.

Clinical Images

Figure Legends:

Figure 1: Preoperative anterior segment showing superior ciliary staphyloma with scleral thinning.

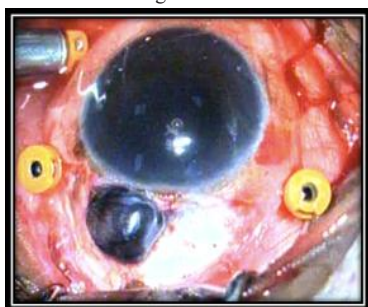


Figure 2: Scleral graft preparation



Figure 3: Sclera to sclera interrupted sutures taken with 8-0 vicryl

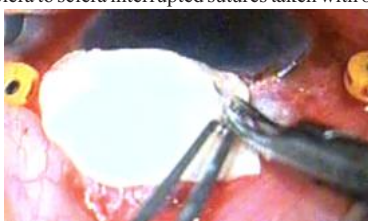


Figure 4: Conjunctiva repositioned with fibrin glue

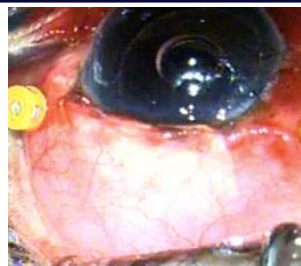
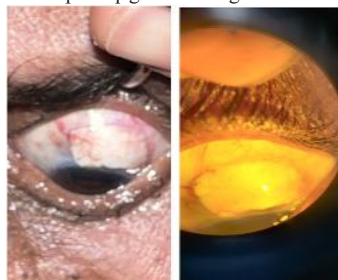


Figure 5: 1 month post op graft shows good vascularisation



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